

ON THE GENUS *TOMIGERUS*, SPIX, WITH DESCRIPTIONS OF
NEW SPECIES.

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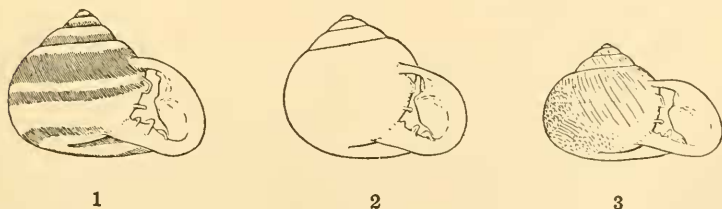
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DURING last year I received some small but interesting collections of land and fresh-water shells found by Mr. Francisco Dias da Rocha at Fortaleza, Ceará. As I propose to deal more fully with the matter again in another place, I have here only given descriptions of the new species and added some remarks on the subdivision of the genus *Tomigerus*.

I. SPECIES COLLECTED BY MR. DIAS DA ROCHA.

TOMIGERUS LÆVIS, n.sp. Fig. 2.

Shell subglobose, not much distorted, with a straightened umbilical suture, which is bordered with yellowish-brown, the rest of the shell being white, shining, and somewhat transparent. Surface smooth, sculptured only with faint growth-striae. Spire shortly conical; whorls $4\frac{1}{2}$, convex, separated by a deep suture, the last distorted, excavated behind the columellar lip, and having an oblique groove



behind the outer lip. Aperture vertical, subtriangular, with three small parietal lamellæ, of which the uppermost is bifid, and the middle one very minute, almost obsolete. The baso-columellar margin has three lamellæ, and the outer lip a large obliquely-entering plate-like fold within the outer margin, its upper end being bifid. Peristome expanded, white. Alt. 10 mm.; greater diam. 13, lesser diam. 9 mm.

TOMIGERUS ROCHAI, n.sp. Fig. 1.

Shell compressed-ovate, distorted as if by pressure on the apertural side, imperforate, with a long straightened umbilical suture. Surface sculptured with faint spiral impressed lines and with somewhat irregular riblets, except on the last half-whorl, which is strongly corrugated. Spire conic; apex white; whorls 5, nearly flat, the last distorted, excavated behind the columellar lip, and having an

oblique groove behind the outer lip. Aperture vertical, somewhat triangular, with three lamellæ on the parietal wall, three on the baso-columellar margin, and a large obliquely-entering plate-like fold within the outer lip, its upper end being bifid. Peristome broadly expanded, white. Body-whorl whitish, with three broad blackish-brown uninterrupted bands, the upper one broadest. The upper whorls are dark brown, with a white subsutural band. Alt. 11.5 mm.; greater diam. 15.5, lesser diam. 10 mm.

Collected by Mr. Francisco Dias da Rocha, to whom the species is dedicated.

The four specimens examined are quite similar, but in two of them the dark colour of the last whorl is divided in four bands, and another example is very pale, the bands nearly completely disappearing, except on the base, where the umbilical rimation is bordered with dark-brown, as in the other examples. The aperture, in all specimens, is white on the lip and darkish around the folds.

This species is allied to *T. clausus*, but is larger, with a more elevated spire, and a much broader aperture. The uppermost parietal fold is united above to the peristome in *T. clausus*, whereas in *T. Rochai* it is a little remote.

TOMIGERUS CORRUGATUS, n.sp. Fig. 3.

This species is closely allied to *T. Rochai*, but larger and with a shorter spire. The bands are the same, but in one of the two examples they appear only at the base. As the differences in the spire coincide with those of the dimensions, I have no doubt that the two species are really different. Alt. 13 mm.; greater diam. 21, lesser diam. 12 mm.

TOMIGERUS CLAUSUS, Spix.

Tomigerus clausus, Pilsbry: Manual of Conchology, ser. II, vol. xiv, p. 106, pl. vii, figs. 67-70.

The examples collected by Mr. Dias da Rocha correspond with the description given by different authors. The coloration varies from white to pale-brownish, the dark bands always being well developed. The largest specimen has the following dimensions: alt. 11.5 mm.; greater diam. 17, lesser diam. 11 mm.

T. clausus seems to be the most common species of *Tomigerus* in Ceará.

The species described above are of interest in various respects. A new type is represented by *T. levis*, remarkable for its smooth, very white, and somewhat transparent shell, but the brown band of the umbilical suture shows that this species is related to the banded forms. It is a rule in the species of *Tomigerus*, if the bands are disappearing, that they are retained longest on the under side and principally along the umbilical suture. Likewise the two other species, which are closely allied, exhibit a feature not yet found in the genus. On them the anastomosing branched riblets or wrinkles, which only feebly exist in *T. clausus*, are very strongly developed.

By the collection of Mr. Rocha the number of the known species of *Tomigerus* is raised from four to seven, that is to say, almost doubled. Mr. Rocha has commenced the malacological exploration of his native State with great ability, and it is to be hoped that he will continue it with success, and also that it will be possible for him to furnish us also with the animals preserved in alcohol, in order that we may determine exactly, by anatomical examination, the systematic position of the genera *Tomigerus* and *Anostoma*. Of the latter genus he collected *A. octodentatum*, F. de Waldh.

II. NOTES ON *TOMIGERUS*.

On this genus we already have a good monograph by Pilsbry, in his excellent Manual of Conchology, ser. II, Pulmonata, vol. xiv, pp. 105-109, 1902. In considering this genus I have not dealt in detail with the synonymy of the known species. In one respect only it seems to me desirable to propose an arrangement different to that adopted by Pilsbry. With regard to the lamellæ of the outer lip, *T. gibberulus*, with two folds, differs from all the other species, which have only one. Moreover, as its parietal lamellæ are also different in form from those in the other species, it is quite evident that *T. gibberulus* represents a distinct section. As *T. gibberulus* is the oldest species of the genus it becomes necessary to retain for it the name *Tomigerus*, s.str., and to form a new subgenus for all the remaining species characterised by a single lamella on the outer lip, for which I propose the name *Pilsbryella*.

The following is a key to the natural arrangement of the species of the genus *Tomigerus*:—

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|-----|--|------------------------|
| a. | Outer lip with two lamellæ; subgenus <i>Tomigerus</i> , s.str. | <i>T. gibberulus</i> . |
| b. | Outer lip with one lamella only; subgenus <i>Pilsbryella</i> . | |
| c. | Shell brown or corneous, not banded; spire elevated conic, whorls smooth or with slight growth-wrinkles. | |
| cc. | Shell whitish with brown bands, spire shortly conical. | |
| d. | Umbilical suture straight in the middle; whorls 5, diam. about 12 mm. | <i>T. turbinatus</i> . |
| dd. | Umbilical suture short, arcuate, whorls 4-4½; diam. 5.75-7.5 mm. | <i>T. Cumingi</i> . |
| e. | Surface smooth, shining, white, with a brown umbilical band only. | <i>T. lævis</i> . |
| ee. | Surface strongly sculptured, with dark bands. | |
| f. | Back of the last whorl corrugated. | |
| g. | Aperture higher than large; bands narrow, yellowish. | <i>T. clausus</i> . |
| gg. | Aperture as high as broad; bands broad, dark. | |
| h. | Spire short, lesser diam. 12 mm. | <i>T. corrugatus</i> . |
| hh. | Spire more elevated, lesser diam. 10 mm. | <i>T. Rochai</i> . |